

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

NGUYEN, ET AL.

Serial No.: 10/691,319

Filed: OCTOBER 22, 2003

Title: "METHODS FOR REDUCING
PARTICULATE DENSITY AND
METHODS OF USING REDUCED-
DENSITY PARTICULATES"

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Group Art Unit: 1762

Confirmation No.: 5926

Examiner: TSOY, ELENA

Atty. Docket No: HES 2003-IP-010380U1

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Honorable Commissioner of Patents
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PRE-APPEAL BRIEF REQUEST FOR REVIEW

The following Pre-Appeal Brief Request for Review ("Request") is being filed in accordance with the provisions set forth in the Official Gazette Notice of July 12, 2005 ("OG Notice"). Pursuant to the OG Notice, this Request is being filed concurrently with a Notice of Appeal and the applicable fee. The review is requested for the reasons stated in the attached five pages. Thus, Applicants respectfully request reconsideration of the application in light of these remarks.

REMARKS

In a Final Office Action dated April 9, 2008 ("Final Office Action") and an Advisory Action dated July 8, 2008, the Examiner improperly made the following rejections:

- Rejections of claims 35-36, 42, 45-46, 48-49, 68-73, 75, and 76 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Application Publication No. 2002/0048676 issued to McDaniel, *et al.* (hereinafter "*McDaniel*") in view of U.S. Patent No. 5,585,524 issued to Sielcken, *et al.* (hereinafter "*Sielcken*");
- Rejections of claims 18-19, 25, 28-29, 31-32, 34, and 65-66 under 35 U.S.C. § 103(a) as being unpatentable over *McDaniel* in view of *Sielcken*, further in view of U.S. Patent No. 4,969,523 issued to Martin, *et al.* (hereinafter "*Martin*");
- Rejections of claims 35-36, 45, 49, 68-70, 72, and 75 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,493,875 issued to Beck, *et al.* (hereinafter "*Beck*") in view of *Sielcken*;
- Rejections of claims 18-19, 25, 28-29, 31-32, 34, 65-66 and 77 under 35 U.S.C. § 103(a) as being unpatentable over *McDaniel* in view of *Sielcken*, further in view of *Martin*, and further in view of U.S. Patent No. 5,908,073 issued to *Nguyen*, *et al.* (hereinafter "*Nguyen*");
- Rejections of claims 42, 46, 73, and 76 under 35 U.S.C. § 103(a) as being unpatentable over *Beck* in view of *Sielcken*, and further in view of *McDaniel*; and
- Rejections of claims 26, 43, and 74 under 35 U.S.C. § 103(a) as being unpatentable over *McDaniel* in view of *Sielcken* in view of *Martin*/*McDaniel* in view of *Sielcken* in view of *Martin* in view of *Nguyen*/*McDaniel* in view of *Sielcken*/*Beck* in view of *Sielcken*/*Beck* in view of *Sielcken* in view of *McDaniel*, and further in view of U.S. Patent 4,665,988 issued to Murphey *et al.* (hereinafter "*Murphey*").

Each of these rejections contains clear legal and factual deficiencies.

1. **Claims 35-36, 42, 45-46, 48-49, 68-73, 75, and 76 are not obviated by *McDaniel* in view of *Sielcken***

Applicants respectfully submit that the Examiner has not shown that the combination of *McDaniel* and *Sielcken* discloses every element recited in Applicants' claims as required to obviate the claims under 35 U.S.C. § 103(a). MPEP § 2142. More specifically, this combination fails to teach or suggest "adhering the density reducing material to a surface of the coated particulate on-the-fly to create at least one reduced-density, coated particulate."

Applicants recite a method in independent claims 35 and 68 wherein a coated particulate is provided that comprises a particulate substrate and a coating material. Applicants further recite that a density reducing material is adhered to the surface of this coated particulate on-the-fly to create a reduced-density coated particulate. Instead of disclosing such a reduced-

density coated particulate, *McDaniel* discloses a composite particulate comprising at least one filler material that is combined in a “substantially homogenous” mixture with a resin binder. *McDaniel* at [0053], [0057], and [0059]. This composite particulate may then optionally be coated with a second portion of binder. *Id.* at [0059] and Fig. 6. *McDaniel* discloses that these composite particulates are made by mixing filler materials (of high or low density) with a binder to form “substantially homogenous core particles of granulated product comprising the filler particles and the first portion of binder.” *Id.* at [0059] and Fig. 5. *McDaniel* goes on to further clarify that, “[b]y ‘substantially homogeneous’ it is meant that the core particle has *an absence of a large substrate particle as common, for example, for coated sand proppants.*” *Id.* at [0059] (emphasis added). A visual depiction of this is shown in Figure 5 of *McDaniel*. Thus, *McDaniel* never discloses a coated particulate with a density reducing material adhered to the surface of the coated particulate.

In addition, Applicants’ independent claims 35 and 68 specifically recite “providing at least one coated particulate comprising a coating material and a particulate material.” In Applicants’ Specification, the term “particulate material” is defined as having “[s]uitable sizes rang[ing] from 4 to 100 U.S. mesh, [while] in certain preferred embodiments the sizes range from 10 to 60 US mesh.” See Specification at [0013]; also see MPEP § 2111.01 (claims are to be interpreted in light of the specification). This “particulate material” recited in Applicants’ claims is exactly the “substrate particle” which *McDaniel* specifically teaches an “absence of” in the composite particles. Therefore, *McDaniel* cannot obviate Applicants’ claims because it teaches away from the “coated particulate” recited in Applicants’ claims. MPEP § 2141.02.

Lastly, *Sielcken* fails to remedy the deficiencies of *McDaniel*. The Examiner cites to *Sielcken* for the proposition that it would be obvious to perform the method of preparing the particulates disclosed in *McDaniel* “on-the-fly.” This is incorrect. The subject of *Sielcken* is a method for the preparation of an aldehyde. The cited portion of the reference describes suitable batchwise and continuous processes for the hydroformylation step of the aldehyde preparation method. Such processes do not obviate on-the-fly methods for adhering density-reducing materials onto a surface of a coated particulate for use in a subterranean formation, as there are substantial differences in structure and function of Applicants’ invention and the invention of

Sielcken. MPEP § 2141.01(a). Furthermore, the “tubular reactor” taught by *Sielcken* is not analogous to the on-the-fly method of Applicants’ claims.

2. **Claims 18-19, 25, 28-29, 31-32, 34, and 65-66 are not obviated by *McDaniel* in view of *Sielcken*, in further view of *Martin***

The Examiner has rejected claims 18-19, 25, 28-29, 31-32, 34, and 65-66 under 35 U.S.C. 103(a) as being unpatentable over *McDaniel* in view of *Sielcken*, in further view of *Martin*. However, as previously discussed above, the combination of *McDaniel* and *Sielcken* fails to teach or suggest “adhering the density reducing material to a surface of the coated particulate on-the-fly to create at least one reduced-density, coated particulate.” Further, *Martin* also fails to teach or render obvious the missing elements. Rather, the Examiner has merely relied on *Martin* for its alleged teaching of the use of polystyrene divinylbenzene as a density reducing material.

3. **Claims 35-36, 45, 49, 68-70, 72, and 75 are not obviated by *Beck* in view of *Sielcken***

Applicants respectfully submit that the Examiner has not shown that the combination of *Beck* and *Sielcken* discloses every element as recited in Applicants’ claims. More specifically, the combination fails to teach or suggest “adhering the density reducing material to a surface of the coated particulate on-the-fly to create at least one reduced-density, coated particulate.”

Beck discloses coating a proppant by the steps of: (1) mixing core particles with adhesive to provide adhesive-coated core particles, (2) while the adhesive is still tacky, mixing the coated core particles with hollow microparticles to adhere a plurality of the microparticles to each coated core, and (3) curing each adhesive composition to a nontacky state *while keeping the individual coated core particles substantially out of adherent contact with each other*. See col. 2, line 61 - col. 3, line 8. To keep the individual coated core particles substantially out of adherent contact with each other, *Beck* teaches that the core particles may be tumbled in an excess of hollow microparticles. See col. 3, lines 10-14. Such a requirement teaches away from an on-the-fly process. MPEP § 2141.02.

In response to this argument, the Final Office Action states “[t]he ‘while keeping the individual coated core particles substantially out of adherent contact with each other’ requirement would not teach away from an on-the-fly process because the on-the-fly process can also be carried out in excess of hollow microparticles.” (Final Office Action at 8C.) This

assertion is incorrect. The process of *Beck* does indeed teach away from Applicants' claimed on-the-fly process. *Beck* teaches tumbling the core particles in an excess of hollow microparticles to keep the individual coated core particles substantially out of adherent contact with each other; such a tumbling process teaches away from Applicants' claimed on-the-fly method. As defined in Applicants' Specification, on-the-fly means that "a flowing stream is continuously introduced into another flowing stream so that the streams are combined and mixed while continuing to flow as a single stream as part of the on-going treatment." See *Specification* at [0036]. Thus, if the core particles were tumbled in an excess of hollow microparticles, there would be no second flowing stream, and thus the process would not be an on-the-fly process.

Furthermore, as argued above, *Sielcken* fails to obviate Applicants' claimed on-the-fly method because (1) there are substantial differences in structure and function of Applicants' invention and the invention of *Sielcken* and (2) the "tubular reactor" taught by *Sielcken* is not analogous to the on-the-fly method of Applicants' claims.

4. **Claims 18-19, 25, 28-29, 31-32, 34, 65-66, and 77 are not obviated by *McDaniel* in view of *Sielcken*, in further view of *Martin*, and further in view of *Nguyen***

The Examiner has rejected claims 18-19, 25, 28-29, 31-32, 34, 65-66, and 77 under 35 U.S.C. 103(a) as being unpatentable over *McDaniel* in view of *Sielcken*, in further view of *Martin*, and in further view of *Nguyen*. However, as previously discussed above, the combination of *McDaniel*, *Sielcken*, and *Martin* fails to teach or suggest "adhering the density reducing material to a surface of the coated particulate on-the-fly to create at least one reduced-density, coated particulate." Further, *Nguyen* also fails to teach or render obvious the missing elements. Rather, the Examiner has merely relied on *Nguyen* for its alleged teaching of suspension of fibrous bundles and/or proppant in a fracturing fluid on-the-fly.

5. **Claims 42, 46, 73, and 76 are not obviated by *Beck* in view of *Sielcken* in further view of *McDaniel***

The Examiner has rejected claims 42, 46, 73, and 76 under 35 U.S.C. 103(a) as being unpatentable over *Beck* in view of *Sielcken* in further view of *McDaniel*. However, as previously discussed above, the combination of *Beck* and *Sielcken* fails to teach or suggest "adhering the density reducing material to a surface of the coated particulate on-the-fly to create at least one reduced-density, coated particulate." Further, as also previously discussed above, *McDaniel* also fails to teach or render obvious the missing elements.

6. Claims 26, 43, and 74 are not obviated by McDaniel in view of Sielcken in view of Martin/McDaniel in view of Sielcken in view of Martin in view of Nguyen/McDaniel in view of Sielcken/Beck in view of Sielcken/Beck in view of Sielcken in view of McDaniel, and further in view of Murphey

Applicants respectfully submit that any of these combinations of references does not obviate independent claims 18, 35 and 68 because, as previously detailed above, the combination of references does not teach or suggest each and every element of the claims, and those elements which are not taught or suggested by the combination of references are not obviated in any manner by any of the combinations. MPEP § 2142.

Furthermore, *Murphey* does not teach or render obvious the elements not taught by each of the combinations of references. Rather, the Examiner has merely relied upon *Murphey* for its alleged teaching of the use of ethylene glycol butyl ether as a solvent for dissolving epoxy resins such as bisphenol A-epichlorohydrin.

CONCLUSION

In light of the above remarks, Applicants respectfully request a decision from the Panel that the Examiner's rejections are improper and allowance of all pending claims. Applicants hereby petition under the provisions of 37 C.F.R. § 1.136(a) for a one-month extension of time. The Commissioner is hereby authorized to debit should the Deposit Account of Baker Botts L.L.P., No. 02-0384, in the amount of \$120.00 for the fee under 37 C.F.R. § 1.17(a)(1) for the one-month extension of time. Should the Commissioner deem that any fees are due, including any fees for extensions of time, Applicants respectfully request that the Commissioner accept this as a Petition Therefor and direct that any additional fees be charged to the Deposit Account of Baker Botts L.L.P., No. 02-0383, Order Number 063718.0178.

Respectfully submitted,



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